

A Brief History of Wisconsin's Forests

Wisconsin's forests are reservoirs of vast ecological, economic, and social wealth. Throughout Wisconsin's history, forests have played a primary role in supporting the people who lived here. The forests of Wisconsin are dynamic, living systems that change with the human demands placed on them as well as through natural occurrences such as succession, severe weather events, fire, insect infestations, and disease.

Forests Before European-American Settlement

At the time of European-American settlement (1825–1880), forests stretched over most of the area that would become the state of Wisconsin. Between 22 and 30 million acres—between 63% and 86% of the total land area of the state—were covered with forests. A complex array of habitats supported wildlife, plants, and humans [Curtis, 1959].

The last glaciers receded from northern Wisconsin between 10,000 and 12,000 years ago. Their departure opened the area for colonization by plants, animals, and humans.

There are two major forest divisions in Wisconsin, the Northern Mixed Forest and the Southern Broadleaf Forest, with several ecosystems represented in each [Wisconsin Department of Natural Resources, 1995].

The native vegetation of the northern region is more cold tolerant. Pine, spruce, and tamarack are more abundant. Before European settlement, sugar maple, hemlock, and yellow birch dominated the mesic forests of northern Wisconsin. Various pine species were also important. Aspen and white birch were important successional species that followed natural disturbance across northern Wisconsin. Acid bogs were a significant ecosystem in the northern Wisconsin forest. Pine forests and barrens were important on the sandy soils of central and northwest Wisconsin. In the southern part of the state, oak-hickory and maple-basswood forests were especially prevalent. The southern and western parts of the state also supported oak savanna and prairie habitats. Forested and non-forested wetlands were found throughout the state [Finley, 1976].

EARLY HUMAN INFLUENCE

There is evidence of human presence in Wisconsin as early as 11,000 years ago. The post-glacial ecology of Wisconsin was influenced by humans from its very beginning. The extent of that influence in times before European settlement is remarkable.



Staber/W. Reese

Before European-American settlement, a good portion of Wisconsin was covered in old forest, like this white pine forest. Menominee Indian Reservation.



Savannas and prairies, like this one, were maintained by Native Americans through use of fire. New Richmond.

New research indicates that before European contact beginning in 1492, there were up to 100 million people living in North America. In Wisconsin, fifteenth century population is estimated at 60,000–70,000. Between 1492 and 1634, the population was reduced to as few as 4,000 individuals, primarily as a result of introduced European diseases and war [Gartner, 1997].

Especially prior to this population collapse, native people profoundly influenced the land and ecology of Wisconsin in areas where they lived. Perhaps most significant was their use of fire. It is thought that native people used fire throughout the state to varying degrees to encourage the establishment of favored plant and animal communities. Prairie and savanna were likely maintained by these fires [Gartner, 1997].



Whitetail deer were an important food resource to native people.

Hunting and trapping also influenced the ecological communities of the area that later became Wisconsin. Native people hunted a broad spectrum of animals. Deer and elk were the cornerstone of the Woodland Indians' diet, but mussels, birds, fish, and over 25 other mammal species were utilized as well [Gartner, 1997]. Many animals' populations may have been limited by human hunting rather than by other carnivores or food supply [Meltzer, 1999].

Nuts and fruits were also important to native people, and there is evidence that they planted orchards to ensure a supply. There are accounts from early European explorers describing the "planted tree groves" of chestnuts, locusts, oaks, ashes, basswoods, beeches, cottonwoods, maples, pecans, medlars, mulberries, and plums. These "orchards" may have resulted in the forest islands seen on the prairies by early European explorers [Gartner, 1997].

Foraging also influenced the ecology of Wisconsin. Collected plants may have become over-represented in biotic communities because of Indian dispersal. It was said of wild rice by the Menominee, "whenever the Menomini [sic] enter a region the wild rice spreads ahead, whenever they leave it the wild rice passes." [Gartner, 1997]

Mining, trails, agriculture and placement of settlements in pre-contact times had a large impact on the landscape. Many of our major highways began as roads between native people's settlements hundreds of years ago [Gartner, 1997].

When early explorers arrived in Wisconsin in the 1630s, they found a greatly reduced population. Because of this, until recent archeological research contested the belief, it was assumed that there were very few people living in Wisconsin before European settlement. The forest early European explorers saw had likely changed as a result of the decrease of human population. Many areas which had been maintained by fire as grassland or early successional forest were now mature forests as there was no longer either the need or the capacity to burn or clear the land.

The tribes living in Wisconsin in the mid-1600s included the Winnebago, Ojibwe, Menominee, Dakota, Illinois, Sauk, Fox and Cheyenne. However, some of these groups have stories of migrating from other areas to Wisconsin. For example, the Ojibwe tell of their migration from the eastern ocean in the 1400s. This era corresponds to the "Little Ice Age," a period of significant cooling of the North American continent [Sultzman, 1998]. Temperature between 1450 and 1850 averaged 1.5 degrees Fahrenheit cooler than today.

Forests Since European-American Settlement

Today, Wisconsin's forests are significantly different than those before European-American settlement. A variety of historical reasons can account for this.



Eight million acres of forest were cut by 1898, the height of Wisconsin's Cutover. Langlade County.

EXPLORATION AND SETTLEMENT

In 1634, Frenchman Jean Nicolet landed on the southern shore of Green Bay to arrange a truce between the Winnebago and their enemies so that the French fur trade would be protected, a task at which he succeeded. This was the first direct European influence felt on the land that would become the state of Wisconsin [Sultzman, 1998]. However, for two hundred years, the forests remained sparsely settled while providing for the lucrative fur trade and continuing to support native people [Wisconsin Conservation Department (WCD), 1955].

Various treaties in the early 1800s, which either removed or confined native populations, opened up Wisconsin to intensive European-American settlement [Sultzman, 1998]. With the dramatic increase in human population came increasing demands on resources. Much of the southern part of the state was converted to agriculture. The fertile soil in this area, including much that was previously forested, became the base for some of the most productive farms in the growing nation. During this process, southern forests were cut and burned to aid in clearing the land and to create nutrient-rich ash to fertilize crops. Timber was not a major economic contributor until the 1870s [WCD, 1955].

THE CUTOVER

In the late 1860s, following the Civil War, logging became an important component of Wisconsin's economy. By 1893 Wisconsin had reached its logging zenith and was a world leader in lumber production with over 3.5 billion board feet produced annually. Pulpwood consumption was about 211,000 cords. Sawmills sprang up everywhere along Wisconsin's many rivers, which transported logs to the mill and the finished products to the burgeoning cities to the south and west.



Sargent

Rivers transported much of the timber cut from Wisconsin's forests in the late 1800s. This is a picture of a logjam on the St. Croix River in 1886.

In 1898 the federal government conducted and published a survey of Wisconsin's northern forests. By this time, a first wave of cutting was well underway, and a second beginning. In the survey's introduction, B. E. Fernow estimates the 1850s pine (red and white pine) volume at 130 billion board feet. By 1898, all but 17 billion had been removed, and cutting was continuing at a rate of 2 billion board feet per year. Fernow wrote, "In almost every town in this region logging has been carried on and 8,000,000 of the 17,000,000 acres of forest are 'cut over' lands largely burned over and waste brush lands, and one-half of it as nearly desert as it can become in the climate of Wisconsin." [Roth, 1898]

By the 1930s, most of the valuable timber in the northern area of the state had been removed or destroyed by fire. The harvest occurred in two waves; the pines were harvested first and floated down the rivers to cities to the south. When railroad shipping became available, valuable hardwoods were cut and taken by train to the south. Then the other, less economically desirable trees were cut.

Harvest techniques varied in cutover lands. Some lands were clear-cut, but most were *high-graded*. The largest and most valuable trees were removed, many times leaving species and individuals less dominant to re-seed an area. At the time of the first statewide inventory in 1936, the approximately 16 million acres of forestland in the state was primarily young, early succession second growth.

The Cutover led to a variety of problems for contemporary and future residents. Not least among the challenges was the wave of forest fires that cinched the destruction of millions of acres of trees and took thousands of human lives. Slash (wood residue from logging operations) burned easily and quickly. Fires spread over large areas, leaving ashes in their path.

Another result of the Cutover was the land boom of the early 1900s. In northern Wisconsin, logging companies sold sizable tracts of cut over land to speculators who then sold smaller farms to the immigrant population arriving in Wisconsin, enticed by the promise of land. Farmers diligently removed stumps left from the Cutover, sometimes disposing of them through fire, which further contributed to the frequent and intense forest fires of the era.



The Civilian Conservation Corps fought fires, planted trees, and contributed in substantial ways to Wisconsin's growing conservation ethic. July 1936.

CONSERVATION

This degradation of Wisconsin's forests did not go unnoticed. An era of forest conservation was about to begin. One of the most persistent advocates of conservation was E. M. Griffith, appointed the first state forester in 1904. With the help of people as disparate as Senator Robert LaFollette, Sr., lumber baron Frederick Weyerhaeuser, and University of Wisconsin President Charles R. Van Hise, Griffith pieced together land into state-owned forest preserves. He also oversaw construction of the first state nursery at Trout Lake near Minoqua, implemented new fire control strategies, and was influential in locating the U.S. Forest Products Laboratory in Madison.

Unfortunately, neither the public nor the Wisconsin Supreme Court was ready for such innovations. County governments were concerned about the loss of land from the tax rolls and also contended that Griffith and his cohorts were trying to turn northern Wisconsin into a 'playground' for the rich at the expense of the farmers becoming established in the area.

The Supreme Court found that the land was purchased for the forest preserves under the authority of an improper amendment to the state constitution. Griffith resigned in 1915, and the reforms that he tried to promote were not implemented for another decade.

Finally, in the late '20s and 30s, some of Griffith's goals were realized. A new concern for conservation and an understanding that the forest resource is indeed finite informed new decisions regarding Wisconsin's forests. Farmers in the north realized that the land and climate were not well-suited to agriculture. Many of them abandoned the land, bankrupt. This land reverted to forest.

The State Constitution was amended in 1924 to allow state funds to go to acquisition, development, and preservation of forest resources. The Northern Highland State Forest, still the largest state forest, was the first created under the new amendment. The Forest Crop Law, a precursor to the current Managed Forest Law, was passed in 1927, making it easier for private landowners and counties to conserve forest resources for future use. County forests were created from much of the tax delinquent land of failed farms. In 1928, the first national

Jim Escalante



Early succession species like these paper birch and aspen became very common after the Cutover. Door County.

forest land was purchased in Wisconsin, creating what is now known as the Chequamegon-Nicolet National Forest.

After 50 years of pervasive forest fires, made worse because of the ready availability of fast-burning slash from the extensive harvesting, the public began to value fire control. Human life, farms, buildings, and forests were protected with new fire prevention and control measures. With Smokey Bear's advent in 1944, the public embraced a commitment to fire prevention and forest conservation in Wisconsin.

In the '30s and early '40s, a notable influence on Wisconsin's forests was the Civilian Conservation Corps (CCC). As in other areas, the "CCC boys" fought fires, planted trees, built park buildings, and worked on other conservation projects. Reforestation efforts commenced across the state, with the goal being to renew the forests. Many of Wisconsin's older pine plantations originated with CCC efforts.

The Cutover era had dramatically changed the composition, structure, and function of Wisconsin's forests. The extensive logging and large fires allowed species like quaking aspen and paper birch to become prevalent, encouraging large populations of whitetail deer and other wildlife that thrive in early successional habitat.

A forest inventory of Wisconsin was conducted in 1936. It revealed a very young forest, with aspen-birch being by far the most prevalent forest type.

Many years passed before the cutover forests recovered sufficiently for harvest. Fortunately, by this time there was a better understanding of the need to conserve forest resources and employ sound forest management. In many instances, professional foresters from forest products companies and government agencies worked together to bolster the growing forests.

Since the Cutover era, Wisconsin's forests have recovered dramatically. The state now supports a wide array of healthy forest ecosystems. Ecological, economic, and social benefits have grown with the growing forest. There are also challenges that face Wisconsin's forests including environmental issues, economic demands, and changing expectations among people who use and own the forests. This assessment will discuss the current state of Wisconsin's forest resources as well as issues and trends that will affect the forests' future.

Figure 5

Wisconsin forest area by type,
1936 and 1996

